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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/545,516	04/07/2000	Kenneth J. Hintz		9676

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EXAMINER

BARAN, MARY C

ART UNIT	PAPER NUMBER
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2857

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/545,516

Applicant(s)

HINTZ ET AL

Examiner

Mary Kate B Baran

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 25-38 and 47 is/are rejected.
- 7) ☒ Claim(s) 17-24 and 39-46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

2. The disclosure is objected to because of the following informalities:
- (a) On page 2 line 4, "anda" should be – and a –.
 - (b) On page 7 line 31 and page 8 line 1 the phrase "What is the latest usable completion time for the measurement?" is repeated.
 - (c) On page 9 line 6, "for sensing system" should be – for a sensing system –.
 - (d) On page 9 line 12, "admits of multiple" should be – admits multiple –.
 - (e) On page 9 line 15, "no" should be – not –.
 - (f) On page 9 line 18, "observation" should be – observation. –.
- Appropriate correction is required.

Claim Objections

3. Claim 17 is objected to because of the following informalities: The limitations of claim 17 pertain to "determining the quantitative measure", which is mentioned in claim 15; however, claim 17 is dependent on claim 14, in which "determining quantitative measure" is not mentioned. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear from the claim language how the "health and utilization monitoring" relates to the sensor management system, from which claim 28 is dependent.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7-16, 25-38 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Bier et al. ("Intelligent Sensor Management for Beyond Visual Range Air-to-Air Combat") (hereinafter Bier).

Referring to claim 1, Bier teaches a sensor management system (see Bier, page 264, "Abstract", column 1 lines 1-2), comprising: a mission manager structured and arranged to determine system information needs (see Bier, page 266, "Track Service Prioritization", column 2 lines 1-10); an information instantiator structured and arranged to select one of several measurement functions capable of satisfying the system information needs (see Bier, page 264, "Introduction", column 2 lines 1-8); a set of sensors structured and arranged to collect data for estimating a state of the system, at least one of the sensors being capable of performing the selected measurement function (see Bier, page 266, "Switchboard Operations", column 1 lines 1-15); and a sensor scheduler structured and arranged to identify at least one of the sensors to be used for performing the selected measurement function (see Bier, page 268, "Sensor Load Allocation", column 1 lines 42-49).

Referring to claim 2, Bier teaches a sensor fusion system structured and arranged to estimate the state of the system based on the data collected by the selected sensor (see Bier, page 264, "Introduction", column 1 lines 11-14); memory structured and arranged to maintain a current state estimate of the system and other information that is useful in evaluating the current state of the system (see Bier, page 269, "Sensor Monitor", column 1 lines 17-21); and a communication device structured

and arranged to enable interaction by an operator with the memory (see Bier, page 264-265, "A3M Overview", column 2 line 27 – column 1 line 3).

Referring to claim 3, Bier teaches that the information instantiator is structured and arranged to select the one measurement function based on a first optimization criteria (see Bier, page 266, "Track Service Prioritization", column 1 lines 11-18).

Referring to claim 4, Bier teaches that the sensor scheduler is structured and arranged to identify sensors according to a second optimization criteria that is based on limitations and availability of sensors (see Bier, page 266, "Track Service Prioritization", column 1 lines 37-45).

Referring to claim 5, Bier teaches that the second optimization criteria includes an online greedy urgency driven preemptive scheduling algorithm (see Bier, page 267, "Sensor Load Allocation", column 1 lines 10-15).

Referring to claims 7 and 29, Bier teaches a method for managing sensors of a system (see Bier, page 264, "Abstract", column 1 lines 1-2), comprising: determining system information needs (see Bier, page 266, "Track Service Prioritization", column 2 lines 1-10); selecting one of several measurement functions capable of satisfying the system information needs (see Bier, page 264, "Introduction", column 2 lines 1-8); and selecting at least one of several sensors capable of achieving the selected

measurement function, the sensor selection being based on the availability of sensors capable of satisfying to the selected measurement function (see Bier, page 266, "Switchboard Operations", column 1 lines 1-15).

Referring to claims 8 and 30, Bier teaches that the availability of sensors is based on a level of detail required to achieve the selected measurement function and the capability of the sensors to achieve the level of detail required (see Bier, page 268, "Sensor Load Allocation", column 1 line 49 – column 2 line 10).

Referring to claims 9 and 31, Bier teaches that the sensor selection involves giving preference to sensors that are capable of achieving the required level of detail but that are least capable of exceeding the required level of detail (see Bier, page 268, "Sensor Load Allocation", column 2 lines 16-25).

Referring to claims 10 and 32, Bier teaches estimating a state of the system based on the data collected by the selected sensor (see Bier, page 269, "Sensor Monitor", column 1 lines 1-16), and storing an estimated current state for the system and other information that is useful in evaluating the current state of the system (see Bier, page 269, "Sensor Monitor", column 1 lines 17-21).

Referring to claims 11 and 33, Bier teaches monitoring feedback to determine whether the selected measurement function or selected sensor is unavailable (see Bier,

page 266, "Switchboard Operations", column 1 lines 1-15); and substituting a different measurement function or sensor when the feedback indicates that the selected measurement function or sensor is unavailable (see Bier, page 268, "Sensor Load Allocation", column 2 lines 16-25).

Referring to claims 12 and 34, Bier teaches that the selected sensor is unavailable when being used to accomplish measurement functions having a higher priority than the selected measurement function (see Bier, page 268, "Sensor Load Allocation", column 2 lines 16-25).

Referring to claims 13 and 35, Bier teaches that the selected measurement function is unavailable when sensors are not available to accomplish the selected measurement function (see Bier, page 268, "Sensor Load Allocation", column 1 lines 42-49).

Referring to claims 14 and 36, Bier teaches that determining system information needs comprise: selecting a task capable of achieving system goals, wherein the task is selected based on to its ability to accomplish identified system goals (see Bier, page 264, "A3M Overview", column 1 lines 19-26); and determining the system information required to perform the selected task (see Bier, page 266, "Track Service Prioritization", column 2 lines 1-10).

Referring to claims 15 and 37, Bier teaches that the selecting of the task comprises: identifying several system goals and several tasks for implementing the system goals (see Bier, page 264, "Introduction", column 1 line 1 – column 2 line 8); defining an ordering relationship among the identified system goals and tasks (see Bier, page 265, "A3M Sensor Manager Design", column 2 lines 1-5); and determining a quantitative measure of the relative utility for each task based on a relative contribution of that task to the accomplishment of one or more of the system goals (see Bier, page 266, "Switchboard Operations", column 1 lines 24-32).

Referring to claims 16 and 38, Bier teaches that the defining of the ordering relationship includes: identifying which of the tasks and system goals contribute to each of the other system goals (see Bier, page 265, "A3M Sensor Manager Design", column 2 lines 1-13).

Referring to claims 25 and 47, Bier teaches that the selecting of the task further comprises: determining the relative importance of the system goals based on a relative allocation of resources dedicated to the tasks (see Bier, page 265, "A3M Sensor Manager Design", column 2 lines 1-13).

Referring to claim 26, Bier teaches that the sensor management is utilized to control the sensors of a data collection platform including one of a satellite or military reconnaissance aircraft (see Bier, page 264, "Abstract", column 1 lines 3-5).

Referring to claim 27, Bier teaches that wherein the sensor management is used to acquire data from a network (see Bier, page 264-265, "A3M Overview", column 2 line 27 – column 1 line 3) or database (see Bier, page 266, "Track Service Prioritization", column 2 lines 11-15).

Referring to claim 28, Bier teaches health and utilization monitoring (see Bier, page 265, "A3M Sensor Manager Design", column 2 lines 5-7 and Figure 1, "Health and Status Monitor")

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bier et al. ("Intelligent Sensor Management for Beyond Visual Range Air-to-Air Combat") (hereinafter Bier) in view of Shigematsu et al. (U.S. Patent No. 5,704,016) (hereinafter Shigematsu).

Referring to claim 6, Bier teaches all the features of the claimed invention except that the mission manager utilizes a goal lattice to determine the system information needs.

Shigematsu teaches that the mission manager utilizes a goal lattice to determine the system information needs (see Shigematsu, column 3 lines 23-310).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Bier to include the teachings of Shigematsu because using a goal lattice would have allowed the skilled artisan to enable associative learning (see Shigematsu, column 3 lines 15-22)

Allowable Subject Matter

7. Claims 18-24 and 40-46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- (a) Lopez et al. teach fuzzy reasoning for multisensor management.
- (b) Chaudhuri et al. teach adaptive all-source data fusion system development.
- (c) Rothman et al. teach evaluation of sensor management systems.
- (d) Burks et al. teach a networked sensor system.
- (e) Juengel et al. teach a remote metering system.
- (f) Friedrich et al. teach a system and method for efficiently monitoring quality of service in a distributed processing environment.

(g) Yashara et al. teach a measurement apparatus.

(h) Mehnert teaches a measuring arrangement with a plurality of measuring units.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Kate B Baran whose telephone number is (703) 305-4474. The examiner can normally be reached on Monday - Friday from 8:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S Hoff can be reached on (703) 308-1677. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

MKB


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